IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Lee D. Saathoff et al.
Application No.:	10/788,732
Filing Date:	February 27, 2004
Confirmation No.:	6113
Title:	POWER TRANSMISSION FLUIDS
Examiner:	James C. Goloboy
Group Art Unit:	1797

DECLARATION OF LEE D. SAATHOFF

Mail Stop AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Lee D. Saathoff, hereby declare as follows:

1. I am presently employed by Afton Chemical Corporation, Richmond, Virginia, as an Engineering Specialist. I have over 4 years of experience in the area of transmission lubricant research with Afton Chemical Corporation (formerly Ethyl Corporation). Prior to my employment with Afton Chemical in Driveline Lubricants, I have an additional 30 years at Afton Chemical Corporation.

2. I graduated from Southern Illinois University in Edwardsville, Illinois in 1989 with a Bachelor of Science degree in Electrical Engineering.

3. I am the author, or co-author, of 2 papers in reviewed Journals, relating to gear and transmission lubricants, and am an inventor on 2 U.S. Patents.

4. I am a named inventor of U.S. Application No. 10/788,732. I have read the specification and claims and am familiar with the application. I have also reviewed the Office Action mailed December 9, 2008 as well as the Office Action mailed September 24, 2007 which is referenced in the later mailed Office Action.

5. We have surprisingly found that a tertiary amine where R_1 comprises an alkyl or alkenyl group having about 1 to 4 carbon atoms and R_2 and R_3 independently comprise one of an alkyl, an alkenyl, an alkynyl, an alkylthioalkyl, a haloalkyl, and a haloalkenyl group having from about 8 to 100 carbon atoms provides

significant advantages over other tertiary amines when utilized in a power transmission fluid. For example, it has surprisingly been found that the presently claimed transmission fluids can be used to control friction properties for longer periods of time than transmission fluids containing other tertiary amines.

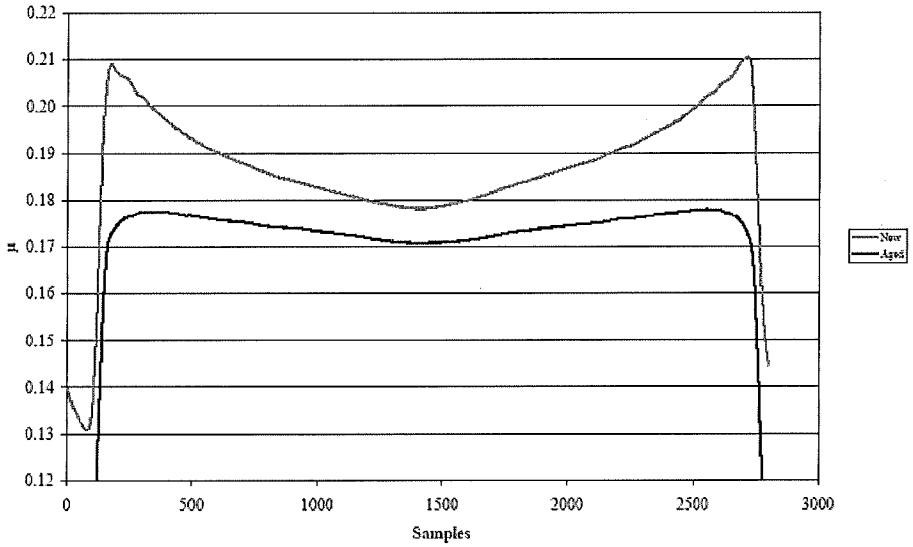
We conducted additional testing on two fluids which data is included and explained below.

Two transmission fluid formulations, differing in that the inventive fluid contained a tertiary amine including one methyl group (R1 of 1 carbon and an R2 and R3 of 12-14 carbon atoms) and the comparative fluid contained a tertiary amine including two methyl groups (R1 and R2 of 1 carbon atom and an R3 of 18 carbon atoms), were tested in the LFW-1 friction test (explained in detail at page 15 of the present specification).

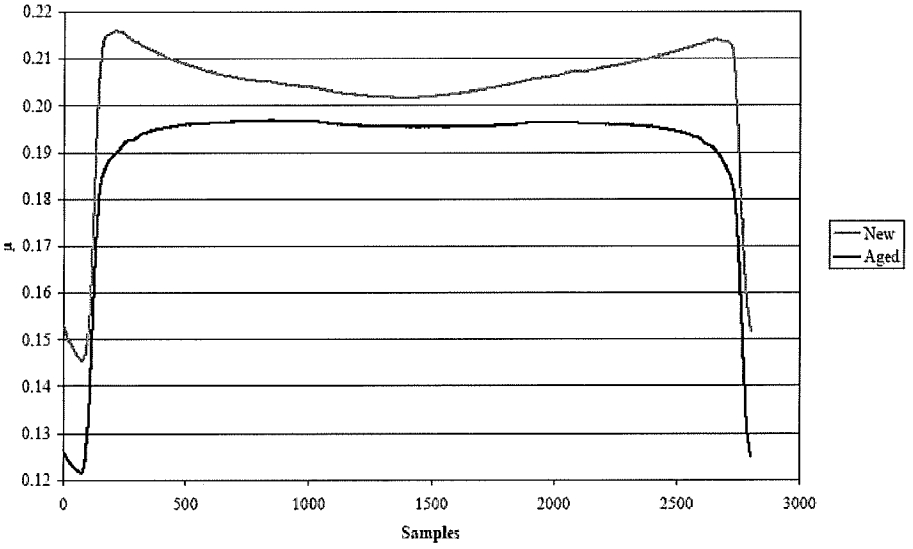
The formulations were each tested before aging and after aging, identified as "New" and "Aged", respectively, in the graphs inserted into the text below. Measurements of friction characteristics were taken at the start of the test when the ring was stationary (the left-hand side of the graph) and as the ring gradually accelerated to its maximum speed (about 0.5 m/s in the center of the graph) and as the ring gradually decelerated back to zero (the right-hand side of the graph).

In order to assess the difference between the tertiary amine including a single methyl group and the tertiary amine including two methyl groups, the ratio of static to dynamic friction was calculated for each run. A difference of almost 10% was found between the "New" formulation containing one methyl group and the "New" formulation containing two methyl groups. A difference of almost 6% was found between the "Aged" formulations. Accordingly, we respectfully submit that there is a difference between the tertiary amines, and the selection of a tertiary amine as defined in the present claims does bring about an unexpected technical effect.

New & Aged Tertiary Amine with 1 Methyl Group in LFW-1



New & Aged Tertiary Amine with 2 Methyl Groups in LFW-1



9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

3-16-09
Date

Lee D. Saathoff